

# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : JIOTETSUKU:KK

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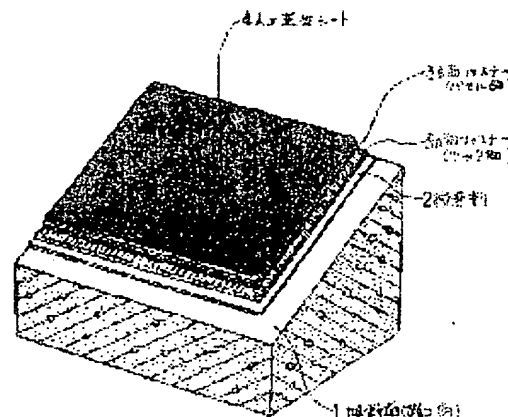
(72)Inventor : KURIYAMA NORIHIRO

## (54) CONSTRUCTION METHOD OF ARTIFICIAL LAWN

### (57)Abstract:

**PROBLEM TO BE SOLVED:** To facilitate maintenance such as renewal, etc. by adhering a hook surface of a hook-and-loop fastener on a construction surface of concrete, etc., by an adhesive and compacting an artificial lawn on which a pile surface of the hook-and-loop fastener on a back surface.

**SOLUTION:** An adhesive 2 is applied on the upper surface of an inclined construction surface 1 formed by depositing concrete or asphalt, and a plural number of hook surfaces 3a of a fastener are adhered on the overall upper surface by sequentially laying them in order and fixed. After curing of the adhesive 2 is finished, an artificial lawn sheet 4 with a pile 3b of a hookand-loop fastener adhered on its back surface is adhered by compacting it by a roller. Adhesion of the pile 3b on the back surface of the artificial lawn sheet 4 can be previously carried out at a plant, but it can be also carried out at a construction site. An outer edge part of the artificial lawn sheet 4 is anchored on the construction surface 1 by fixing an aluminium made presser plate by an anchor pin. Consequently, it is possible to easily, speedily and economically renew an existing artificial lawn and maintain it.



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] This invention relates to the approach of constructing artificial grass at a grass skiing area, a putter golf course, a gateball place, etc.

[0002]

[Description of the Prior Art] Conventionally, in case artificial grass is constructed at a grass skiing area, a putter golf course, a gateball place, etc., adhesives are applied to the whole front face of the ground (construction side) which placed concrete or asphalt, artificial grass is stuck directly, and the \*\*\*\*\* approach is taken. Although the artificial grass laid by such movement facilities is based also on operating frequency, the need of sticking again the part which usually deteriorated by press scratch etc. in four - five years comes out of it.

[0003]

[Problem(s) to be Solved by the Invention] However, while this whole grass or a part stuck artificial grass by the approach of pasting up on the ground soon with adhesives like before and requiring the great effort on the occasion of the substitute activity, there was a problem that the uneconomical situation arose. That is, since (a). activity takes time and effort, closing of a prolonged facility is needed.

(b) A construction contractor is limited in order to require the technique of . speciality.

(c) Twice [ about ] as many cost as . establishment construction starts.

It is the said condition. It aims at offering the construction approach of the artificial grass which can be constructed economically while artificial grass can stick this invention again, or it can be stuck quickly and easily on the occasion of a maintenance in view of the above-mentioned trouble and can do a substitute activity.

[0004]

[Means for Solving the Problem] For this reason, in this invention, the surface fastener of a pair is formed in the rear face and the ground (construction side) of artificial grass, and it is characterized [ 1st ] by laying this artificial grass free [ the ground (construction side) and attachment and detachment ], and is characterized [ 2nd ] by having established the pile side of a surface fastener in the rear face of artificial grass, and establishing the hook side of a surface fastener in the ground (construction side).

[0005]

[Embodiment of the Invention] Hereafter, the gestalt of operation of this invention is explained based on the example shown in a drawing. The perspective view showing the artificial grass construction side which drawing 1 requires for this invention method of construction, the important section expanded sectional view in which drawing 2 shows the joint of artificial grass sheets, and drawing 3 are the important section expanded sectional views showing the anchoring condition of the rim of an artificial grass sheet.

[0006]

[Example] The construction to an artificial lawn skiing area is explained to an example. In drawing 1, 1 is the inclined plane (construction side) which placed concrete or asphalt and was formed. First, adhesives 2 are applied to the top face of this inclined plane (construction side) 1, and 3(hook side) a of the surface fastener of a pair is stuck on this, and it fixes to it. That is, 3(hook side) a of a surface fastener is stuck on the whole top face of the ground (construction side) 1 which covered one by one, arranged and inclined two or more sheets so that it may illustrate. If adhesives are made to recuperate oneself. what stuck 3(pile side) b of a surface fastener on the rear face of the artificial grass sheet 4 is

\*\*\*\*\* (ed) with a roller. Although attachment of surface fastener (pile side) 3b at the rear face of this artificial grass sheet 4 is performed beforehand at works, it may carry out in a construction site. In addition, in this example, pile side 3b of a surface fastener is stuck on the rear face of the artificial grass sheet 4, hook side 3a of a surface fastener is stuck on an inclined plane (construction side) 1 because high endurance is required by the side pasted up on an inclined plane (construction side) 1, and the hook side 3a depends it on the reason rigidity is high, rather than pile side 3b.

[0007] As shown in drawing 2, in consideration of the case where the edges of the artificial grass sheet 4 are joined, here so that a part of end section of a joint may extend from an edge only surface fastener (pile side) 3b the parts to which the other end stuck surface fastener (pile side) 3b on only for the artificial grass sheet 4 so that a part might extend from an edge, and it extended from both ends -- heavy doubling and the part which extended -- the rear face of a sheet 4, and the part which extended -- the top face of surface fastener (pile side) 3b is pasted up with adhesives. Thereby, a joint can be constructed evenly firmly [ comrades / which covered one by one and were put in order / artificial grass sheet 4 ].

[0008] Rim section 4a of the artificial grass sheet 4 fixes the pressure plate 5 made from aluminum with an anchor pin 6, and anchors to the construction side 1. In this example, as an artificial grass sheet 4, the crimp yarn made of nylon (trademark) is fixed to a weatherproof polypropylene base fabric, and it forms in the shape of a cut pile, and considers as grass facing, and what was formed by width of face 1.2m-2m with a die length [ 20m-30m ] in the shape of a long sheet is used.

[0009] In order to stick again the part where artificial grass deteriorated, it cuts off width the whole base fabric of a sheet including the periphery of the part. For example, after cutting off and removing by the cutter in the shape of a rectangle, it lays so that an isomorphism-like new article may be inserted in. and it gets turned up to the joint of an established sheet and a new sheet, and the adhesives for prevention are poured in and it fixes. That is, by the approach of pasting up an artificial grass sheet on the ground soon with adhesives like before, when what had required serious time and effort uses a surface fastener for an established sheet exfoliation activity, exfoliation becomes very easy.

[0010]

[Effect of the Invention] Since this invention was constituted as mentioned above, it has the effectiveness which was excellent in the following.

- (1) Since it. Sticks again or exfoliation of an established artificial grass sheet can be performed easily and quickly on the occasion of a maintenance, construction becomes possible, without closing a facility for a long period of time.
- (2) A construction contractor is not limited in order [ this ] not to require the technique of the speciality for exfoliating a existing artificial grass sheet.
- (3) It sticks again, or can maintain by low cost, and is economical so that clearly also from the thing of . above-mentioned (1).(2).

[Translation done.]

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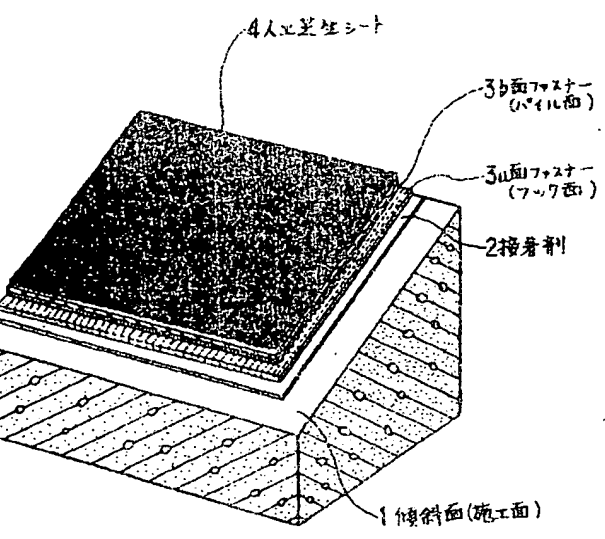
CLAIMS

[Claim(s)]

[Claim 1] The construction approach of the artificial grass characterized by having formed the surface fastener of a pair in the rear face and the ground (construction side) of artificial grass, and laying this artificial grass free [ the ground (construction side) and attachment and detachment ].

[Claim 2] The construction approach of the artificial grass according to claim 1 characterized by having established the pile side of a surface fastener in the rear face of artificial grass, and establishing the hook side of a surface fastener in the ground (construction side).

[Translation done.]



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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the perspective view showing the artificial grass construction side concerning this invention method of construction.

[Drawing 2] It is the important section expanded sectional view showing the joint of artificial grass sheets.

[Drawing 3] It is the important section expanded sectional view showing the anchoring condition of the rim of an artificial grass sheet.

[Description of Notations]

1 Construction Side

2 Adhesives

3a Surface fastener (hook side)

3b Surface fastener (pile side)

4 Artificial Grass Sheet

[Translation done.]

## XP-002266684

AN - 1998-189892 [17]

AP - JP19960234604 19960731

CPY - GEOT-N

DC - Q41

FS - GMPI

IC - E01C13/08

PA - (GEOT-N) GEOTECH KK

PN - JP10046516:A 19980217 DW199817 E01C13/08 003pp

PR - JP19960234604 19960731

XIC - E01C-013/08

XP - N1998-150925

AB - J10046516 The creation method involves providing hook and loop fasteners (3a,3b) on back side of prefab artificial lawn (4) and ground surface, respectively. The fasteners fixes the lawn to ground (1) detachedly.

- ADVANTAGE - Avoids use of adhesive sticking and any special technology. Simplifies removal work.

- (Dwg.1/3)

IW - ARTIFICIAL LAWN CREATION METHOD TURF SKI PLACE GOLF COURSE GATE BALL PLACE HOOK LOOP FASTEN ATTACH PREFABRICATED ARTIFICIAL LAWN MODULE GROUND

IKW - ARTIFICIAL LAWN CREATION METHOD TURF SKI PLACE GOLF COURSE GATE BALL PLACE HOOK LOOP FASTEN ATTACH PREFABRICATED ARTIFICIAL LAWN MODULE GROUND

NC - 001

OPD - 1996-07-31

ORD - 1998-02-17

PAW - (GEOT-N) GEOTECH KK

TI - Artificial lawn creation method for turf ski place, golf course, gate ball place - involves using hook and loop fasteners to attach prefab artificial lawn module detachedly over ground



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B

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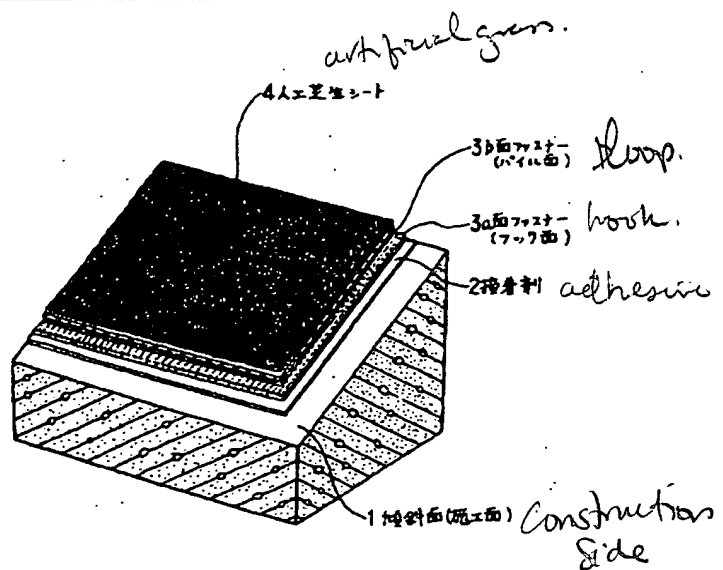
(74) 代理人 弁理士 齋藤 彰

(54) 【発明の名称】 人工芝生の施工方法

(57) 【要約】

【課題】人工芝生の貼り替えあるいはメンテナンスに際し、迅速且つ容易に貼り替え作業を行うことができると共に、経済的に施工することができる人工芝生の施工方法を提供する。

【解決手段】人工芝生シート4の裏面と地面（施工面）1とに一对の面ファスナー3a及び3bを設け、人工芝生シート4を地面（施工面）1と着脱自在に敷設する。



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## 【特許請求の範囲】

【請求項1】人工芝生の裏面と地面（施工面）とに一对の面ファスナーを設け、該人工芝生を地面（施工面）と着脱自在に敷設したことを特徴とする人工芝生の施工方法。

【請求項2】人工芝生の裏面に面ファスナーのバイル面を、地面（施工面）に面ファスナーのフック面を設けたことを特徴とする請求項1記載の人工芝生の施工方法。

## 【発明の詳細な説明】

## 【0001】

【発明が属する技術分野】本発明は、芝スキー場、パターゴルフ場、ゲートボール場等に人工芝生を施工する方法に関するものである。

## 【0002】

【従来の技術】従来、芝スキー場、パターゴルフ場、ゲートボール場等において、人工芝生を施工する際には、コンクリートあるいはアスファルトを打設した地面（施工面）の表面全体に接着剤を塗布して人工芝生を直接貼り付けて敷込む方法が採られている。こういった運動施設に敷設された人工芝生は、使用頻度にもよるが、通常4～5年で押圧擦過等により劣化した部位を貼り替える必要がでてくる。

## 【0003】

【発明が解決しようとする課題】しかしながら、従来のように人工芝生を接着剤で地面に直に接着してしまう方法では、この芝生全体あるいは一部の貼り替え作業に際して、多大な労力を要すると共に、不経済な事態が生ずるという問題があった。すなわち、

（a）、作業に手間が係るため長期間の施設の閉鎖が必要になる。

（b）、専門の技術を要するため施工業者が限定される。

（c）、新設工事の約2倍のコストが掛かる。

といった具合である。本発明は、上記問題点に鑑み、人工芝生の貼り替えあるいはメンテナンスに際し、迅速且つ容易に貼り替え作業を行うことができると共に、経済的に施工することができる人工芝生の施工方法を提供することを目的とするものである。

## 【0004】

【課題を解決するための手段】このため本発明では、人工芝生の裏面と地面（施工面）とに一对の面ファスナーを設け、該人工芝生を地面（施工面）と着脱自在に敷設したことを第1の特徴とし、人工芝生の裏面に面ファスナーのバイル面を、地面（施工面）に面ファスナーのフック面を設けたことを第2の特徴とするものである。

## 【0005】

【発明の実施の形態】以下、図面に示す実施例に基づいて本発明の実施の形態を説明する。図1は本発明工法に係る人工芝生施工面を示す斜視図、図2は人工芝生シート同士の接合部を示す要部拡大断面図、図3は人工芝生

シートの外縁の碇止状態を示す要部拡大断面図である。

## 【0006】

【実施例】人工芝スキー場への施工を例に説明する。図1において、1はコンクリートまたはアスファルトを打設して形成された傾斜面（施工面）である。まず、この傾斜面（施工面）1の上面に、接着剤2を塗布し、これに一对の面ファスナーの（フック面）3aを貼り付けて固定する。すなわち、図示するごとく面ファスナーの（フック面）3aを複数枚順次敷き並べて傾斜した地面（施工面）1の上面全体に貼着する。接着剤を養生させたら、人工芝生シート4の裏面に面ファスナーの（バイル面）3bを貼り付けたものをローラーにて展圧して貼布してゆく。この人工芝生シート4の裏面への面ファスナー（バイル面）3bの貼り付けは予め工場で行うが、施工現場で行うものでも良い。尚、本実施例にて、人工芝生シート4の裏面に面ファスナーのバイル面3b、傾斜面（施工面）1に面ファスナーのフック面3aを貼り付けているのは、傾斜面（施工面）1に接着してしまう側により高い耐久性を要するからであり、フック面3aの方がバイル面3bよりも剛性が高いという理由によるものである。

【0007】ここで、図2に示すように、人工芝生シート4の端部同士を接合する場合を考慮して接合部の一端部は面ファスナー（バイル面）3bのみ一部が縁から延出するように、他端部は人工芝生シート4のみ一部が縁から延出するように、面ファスナー（バイル面）3bを貼り付け、両端部から延出した部分同士を重合させ、延出した一部シート4の裏面と延出した一部面ファスナー（バイル面）3bの上面とを接着剤にて接着する。これにより、順次敷き並べられた人工芝生シート4同士を強固に且つ接合部を平坦に施工することができる。

【0008】人工芝生シート4の外縁部4aはアルミニウム製の押え板5をアンカーピン6で固定して施工面1に碇止する。本実施例では人工芝生シート4として、耐候性のポリプロピレン基布にナイロン（登録商標）製のクリンプ糸を固着してカットバイル状に形成し芝生表面材とし、幅1.2m～2mで長さ20m～30mの長尺シート状に形成されたものを使用している。

【0009】人工芝生の劣化した部位を貼り替えるには、その部位の周辺部を含んでシートの基布ごと広めに切り取る。例えば矩形状にカッターで切り取って剥がした後、同形状の新品を嵌め込むように布設し、既設のシートと新品のシートとの接合部に捲れ防止のための接着剤を注入して固着する。すなわち、従来のように人工芝生シートを接着剤により地面に直に接着してしまう方法では、既設のシート剥離作業に大変な手間を要していたものが、面ファスナーを使用することにより剥離作業が極めて簡単になる。

## 【0010】

【発明の効果】本発明は、以上のように構成したので、

以下の優れた効果がある。

(1)．貼り替えあるいはメンテナンスに際し、既設の人工芝生シートの剥離作業を容易且つ迅速に行うことができるので、施設を長期間閉鎖することなく施工が可能になる。

(2)．既設の人工芝生シートの剥離を行うための専門の技術を要しない、このため施工業者が限定されることがない。

(3)．上記(1)．(2)．のことからも明らかなように、貼り替えあるいはメンテナンスを低コストで行うことができ経済的である。

【図面の簡単な説明】

【図1】本発明工法に係る人工芝生施工面を示す斜視図である。

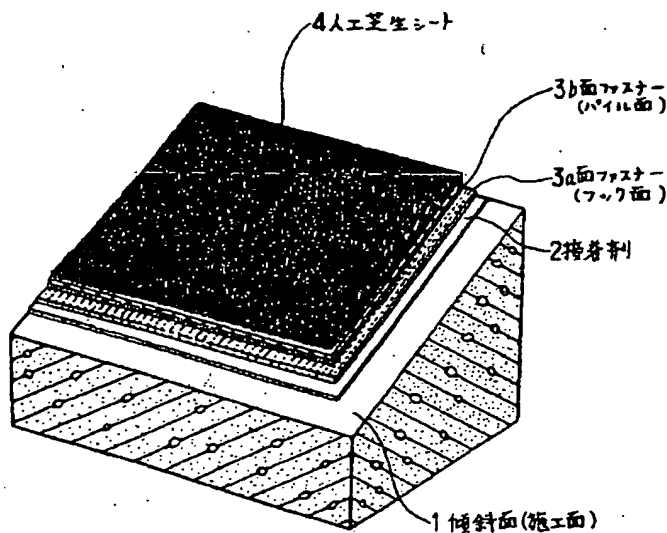
【図2】人工芝生シート同士の接合部を示す要部拡大断面図である。

【図3】人工芝生シートの外縁の碇止状態を示す要部拡大断面図である。

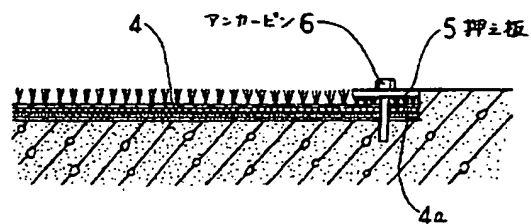
【符号の説明】

- 1 施工面
- 2 接着剤
- 3a 面ファスナー（フック面）
- 3b 面ファスナー（パイル面）
- 4 人工芝生シート

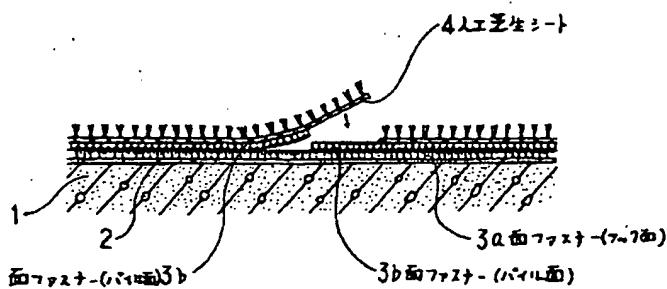
【図1】



【図3】



【図2】



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